

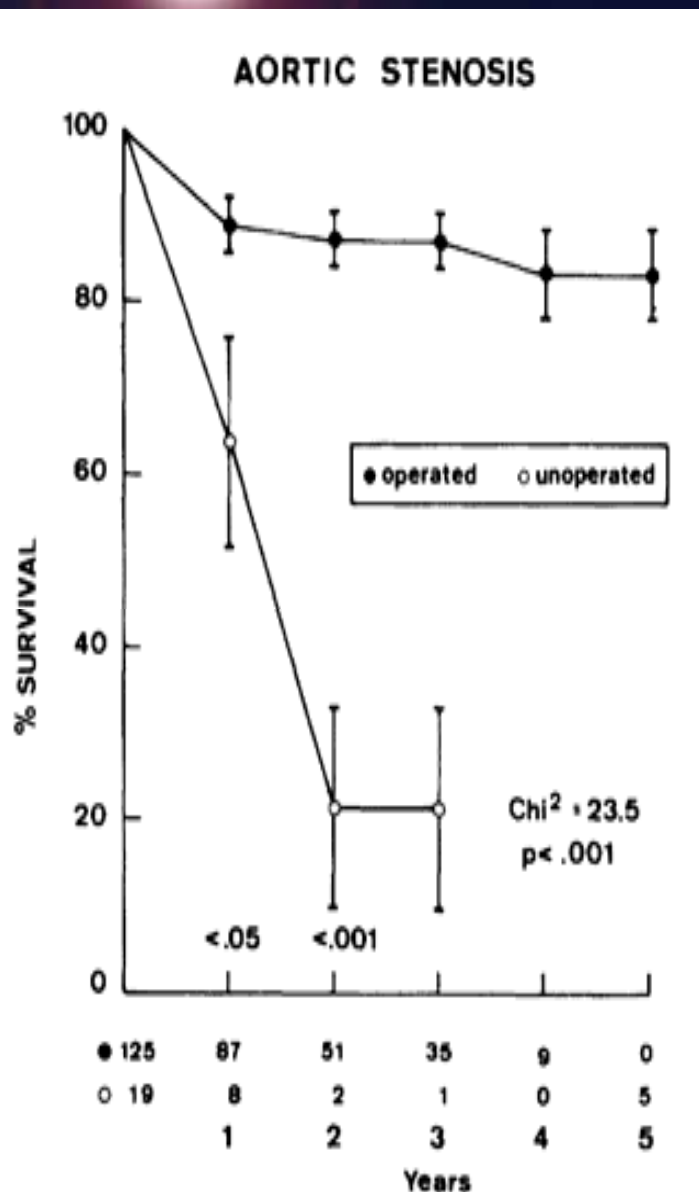
Stenosi aortica calcifica Attuale spazio della cardiocirurgia tradizionale.

Questa indicazione cardine è destinata ad
essere soppiantata?

*Prof. Francesco Alamanni
Università degli Studi di Milano
Dipartimento di Scienze Cardiovascolari
Centro Cardiologico Monzino*



The Effect of Aortic Valve Replacement on Survival

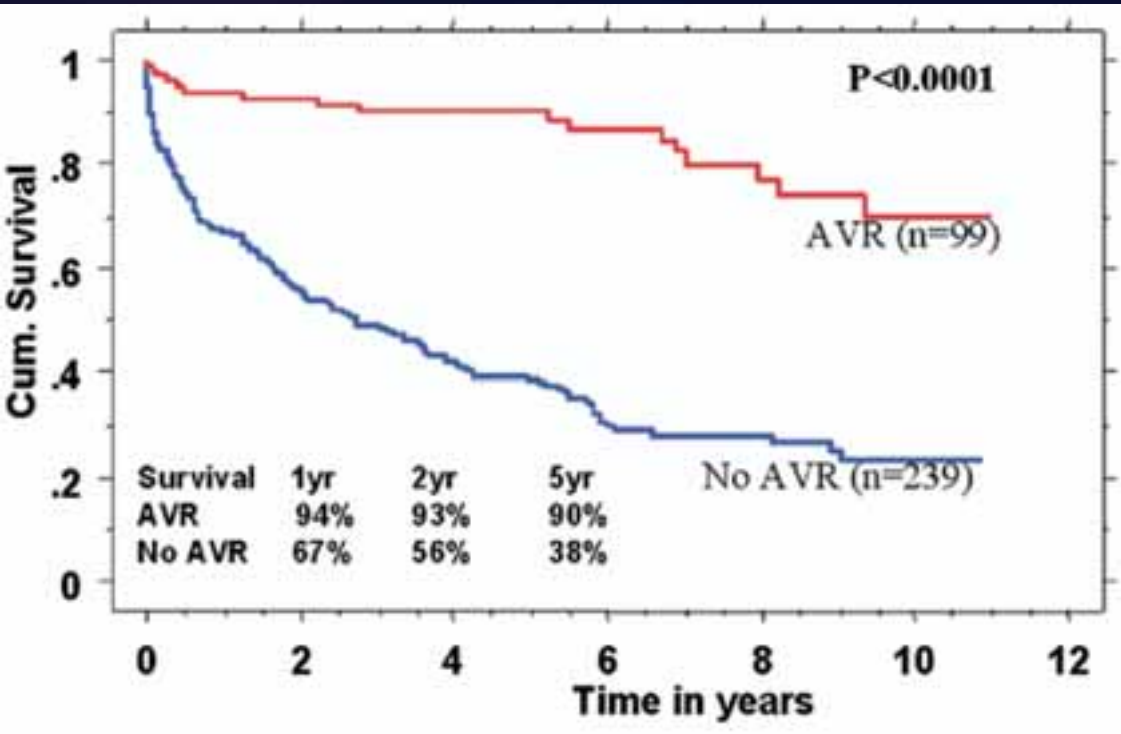


- The mortality difference for people with symptoms of aortic stenosis treated with aortic valve replacement versus those not undergoing this procedure is one of the most striking in medicine.
- “Carabello, Lancet 2009”

F Schwarz, P Baumann, J Manthey, M Hoffmann, G Schuler, HC Mehmel, W Schmitz and W Kubler
Circulation 1982;66:1105-1110

Malignant Natural History of **Asymptomatic** Severe Aortic Stenosis: Benefit of Aortic Valve Replacement

Ramdas G. Pai, MD, Nikhil Kapoor, MD, Ramesh C. Bansal, MD, and Padmini Varadarajan, MD



Benefit of AVR in Asymptomatic Severe AS

Our study shows that AVR may benefit asymptomatic patients with severe AS in terms of improved survival.

We believe AVR should be strongly considered in all patients with severe AS in the absence of severe comorbidities which may limit survival or impair quality of life post- AVR.

Ann Thorac Surg 2006;82:2116-22



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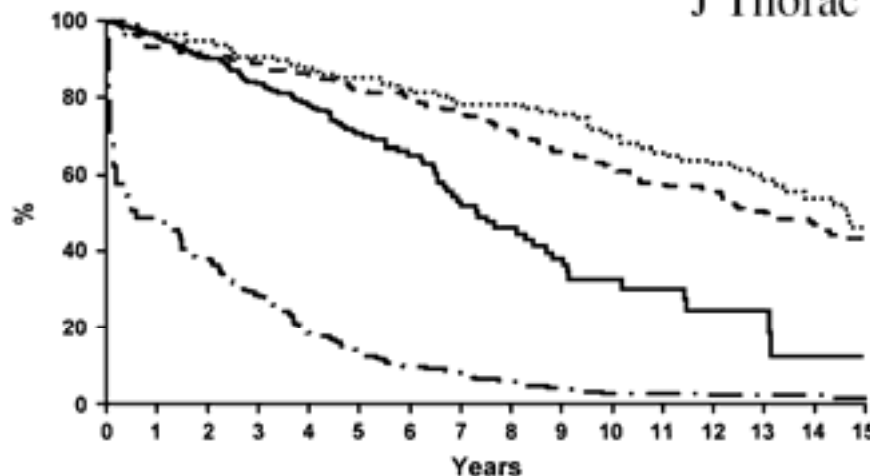


The benefits of early valve replacement in asymptomatic patients with severe aortic stenosis

Morgan L. Brown, MD,^a Patricia A. Pellikka, MD,^b Hartzell V. Schaff, MD,^a Christopher G. Scott, MS,^c Charles J. Mullany, MD,^a Thoralf M. Sundt, MD,^a Joseph A. Dearani, MD,^a Richard C. Daly, MD,^a and Thomas A. Orszulak, MD^a

Conclusion: Among patients with severe aortic stenosis who underwent aortic valve replacement, early and late outcomes were similarly good in patients who had symptoms before the operation compared with those who were asymptomatic. It is important to note that among patients with asymptomatic severe aortic stenosis, the omission of surgical treatment was the most important risk factor for late mortality.

J Thorac Cardiovasc Surg 2008;135:308-15



—	No AVR, no sym	622	437	98	13	1
.....	AVR, no sym	-	45	106	75	25
- - -	AVR, sym	-	45	165	122	42
- · -	No AVR, sym	-	40	27	5	1

Figure 3. Survival of all patients diagnosed with asymptomatic severe aortic stenosis. *AVR*, Aortic valve replacement; *sym*, symptomatic.



Prospects for Percutaneous Valve Therapies

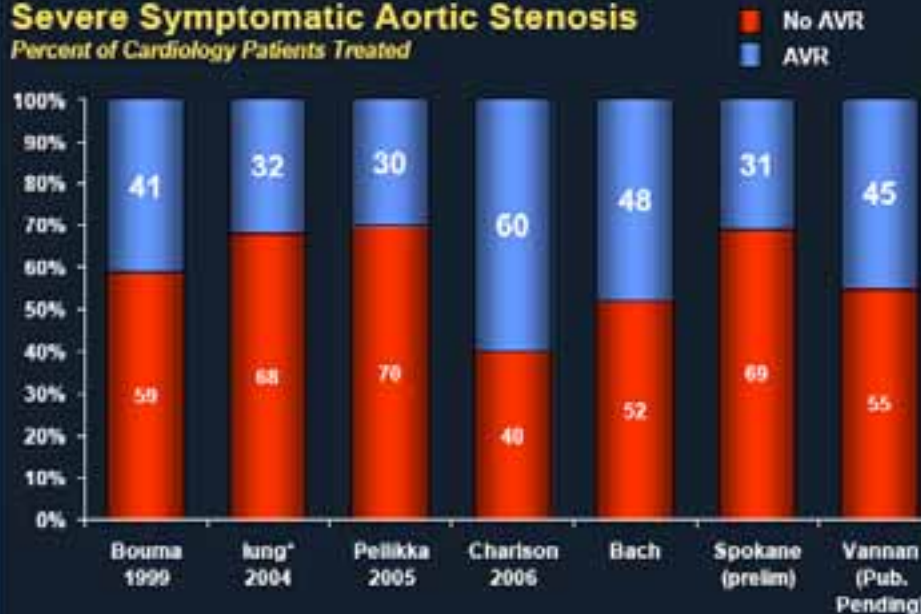
Ted Feldman, MD; Martin B. Leon, MD

Surgical AVR —The “Gold Standard,” but Not for Everyone

Circulation 2007;116;2866-2877

At Least 30% of Patients with Severe Symptomatic AS are “Untreated”!

Severe Symptomatic Aortic Stenosis
Percent of Cardiology Patients Treated



Under-treatment especially prevalent among patients managed by *Primary Care* physicians

1. Bouma B J et al. To operate or not in elderly patients with aortic stenosis: the decision and its consequences. *Heart* 1999;82:143-148
2. Jung H et al. A prospective survey of patients with valvular heart disease in Europe: The Euro Heart Survey on Valvular Heart Disease. *European Heart Journal* 2003;24:1231-1243 (includes both Aortic Stenosis and Mitral Regurgitation patients)
3. Pelikka, Sarano et al. Outcomes of 627 Adults with Asymptomatic, Hemodynamically Significant Aortic Stenosis During Prolonged Follow-Up. *Circulation* 2005
4. Charlson E et al. Decision making and outcomes in severe symptomatic aortic stenosis. *J Heart Valve Dis* 2006;15:313-321

Severe Aortic Stenosis in a Veteran Population: Treatment Considerations and Survival

Faisal G. Bakaeen, MD, Danny Chu, MD, Mark Ratcliffe, MD, Raja R. Gopaldas, MD,
Alvin S. Blaustein, MD, Raghunandan Venkat, MD, Joseph Huh, MD,
Scott A. LeMaire, MD, Joseph S. Coselli, MD, and Blase A. Carabello, MD

The patient's decision to decline surgical referral or AVR (n 47) and severe comorbidities (n 34) were the top two reasons for medical treatment rather than AVR.

The AVR group was younger (69.5 ± 9.6 years versus 75.7 ± 8.6 years; $p < 0.001$) and had a higher prevalence of symptoms (96% versus 71%; $p < 0.001$) than the medical group. The medical group had a lower cardiac ejection fraction (0.42 ± 0.15 versus 0.50 ± 0.12; $p < 0.001$) and was less likely to be independent in activities of daily living (64% versus 74%).

In our study, only 59% of all patients with severe AS underwent AVR.

Terapia medica e rifiuto chirurgo

Table 1. Primary Reasons for Medical (Rather Than Surgical) Treatment of Patients With Severe Aortic Stenosis

A. Primary Reason for Medical Treatment Instead of AVR	Number of Patients (n = 140)
Patient declined surgery	47 (33.6)
Comorbidities	34 (24.3)
Advanced or incurable cancer (10)	
Chronic obstructive pulmonary disease or pulmonary fibrosis (5)	
Major stroke, coma, or altered mental status (5)	
Gastrointestinal bleeding or obstruction (3)	
Uncontrolled infection (3)	
Cirrhosis (2)	
Pulmonary hypertension (2)	
Pulmonary embolism (1)	
Severe thrombocytopenia (1)	
Severe peripheral vascular disease (1)	
Multisystem organ failure (2)	
Asymptomatic	19 (13.6) ^a
Poor functional status	11 (7.9)
Dementia	10 (7.1)
Old age	8 (5.7) ^b
Low ejection fraction	4 (2.9) ^c
Died during workup	3 (2.1)
Porcelain aorta	2 (1.4)
Stable symptoms	2 (1.4)

B. Surgeon's Primary Reason for Not Recommending AVR

	(n = 23) ^d
Comorbidities	12 (52.2)
Uncontrolled infection or sepsis (3)	
Major stroke, coma, or altered mental status (3)	
Advanced or incurable cancer (1)	
Pulmonary hypertension (1)	
Severe thrombocytopenia (1)	
Cirrhosis (1)	
Chronic obstructive pulmonary disease or pulmonary fibrosis (1)	
Multisystem organ failure (1)	
Poor functional status	6 (26.1)
Porcelain aorta	2 (8.7)
Asymptomatic	2 (8.7) ^e
Low ejection fraction	1 (4.3)

^a Seventeen of these patients were more than 70 years old. ^b Age > 80 years. ^c Ejection fraction < 0.20. ^d Twenty-three of 140 patients treated medically were evaluated by a cardiac surgeon and the surgeon recommended nonsurgical treatment. ^e One of these patients was 93 years old; the other had prior coronary artery bypass grafting surgery.



Nuova metodica: TAVI

- Trattamento della quasi totalità dei pazienti non indirizzati alla chirurgia tradizionale.
- Risultati ottimali con pazienti ad alto rischio.



Percutaneous aortic valve replacement

Bruce W. Lytle, MD

J Thorac Cardiovasc Surg 2007;133:299

Percutaneous aortic valve devices are here to stay !!!!!

The surgical concerns regarding percutaneous aortic valves include:

- “We have a great operation now”
- “Few patients are inoperable”
- “The percutaneous devices have problems”
- “It will be dangerous because these devices will be misused”
- “Patients will not get true informed consent”

All these arguments and concerns have some truth to them, but NONE will define the future of percutaneous aortic valve technologies, just as similar concerns have failed to define the anatomic treatment of coronary artery disease.



EUROSCORE: strumento finora utilizzato per predire rischio operatorio.....

Patient-related factors	Cardiac-related factors
Age (years)	Unstable angina ⁶
Gender	LV function
Chronic pulmonary disease ¹	Recent MI ⁷
Extracardiac arteriopathy ²	Pulmonary hypertension ⁸
Neurological dysfunction ³	Operation-related factors
Previous Cardiac Surgery	Emergency ⁹
Creatinine > 200 µmol/ L	Other than isolated CABG
Active endocarditis ⁴	Surgery on thoracic aorta
Critical preoperative state ⁵	Post infarct septal rupture



EuroSCORE Performance in Valve Surgery: A Meta-Analysis

Alessandro Parolari, MD, PhD, Lorenzo L. Pesce, PhD, Matteo Trezzi, MD,
Laura Cavallotti, MD, Samer Kassem, MD, Claudia Loardi, MD, Davide Pacini, MD,
Elena Tremoli, PhD, and Francesco Alamanni, MD

AUC of 0.732 (95% CI, 0.717 to 0.747). We documented a constant trend to overpredict mortality by EuroSCORE, both in the additive and especially in the logistic form.

Ann Thorac Surg 2010;89:787–93



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Absolute and relative risk prediction in patients candidate to isolated aortic valve replacement: should we change our mind?

Gabriele Di Giammarco^{*}, Roberto Rabozzi, Bruno Chiappini, Gabriele Tamagnini

High-Risk Aortic Valve Replacement: Are the Outcomes as Bad as Predicted?

Eugene A. Grossi, MD, Charles F. Schwartz, MD, Pey-Jen Yu, MD, Ulrich P. Jorde, MD, Gregory A. Crooke, MD, Juan B. Grau, MD, Greg H. Ribakove, MD, F. Gregory Baumann, PhD, Patricia Ursumanno, PhD, Alfred T. Culliford, MD, Stephen B. Colvin, MD, and Aubrey C. Galloway, MD

Departments of Cardiothoracic Surgery and Medicine, Division of Cardiology, New York University School of Medicine, New York, New York

Is the European System for Cardiac Operative Risk Evaluation model valid for estimating the operative risk of patients considered for percutaneous aortic valve replacement?

Morgan L. Brown, MD,^a Hartzell V. Schaff, MD,^a Maurice E. Sarano, MD,^b Zhuo Li, MS,^c Thoralf M. Sundt, MD,^a Joseph A. Dearani, MD,^a Charles J. Mullany, MBMS,^a and Thomas A. Orszulak, MD^a

The Journal of Thoracic and Cardiovascular Surgery • September 2008



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The EuroSCORE – 10 years later. Time to change?

- **Three main reasons**
- Firstly, the EuroSCORE is already **outdated**, as it was developed from data on patients operated on almost a decade and a half ago, and the results of surgery have improved significantly since, especially in the elderly.
- Secondly, because the data originated from **only eight European countries** and, from each one of these, only few centres contributed. As with any type of statistical analysis, it generated mean values which may even not serve all these centres. As stated recently [10], ‘the logistic EuroSCORE risk stratification system was developed and validated within the European population. There should be caution in the utilisation of any particular risk stratification system outside the countries of origins, and it is important to carefully evaluate the validity of such system amongst foreign population,’ which means that it may even not be applicable to all European countries.
- Thirdly, and most important, the EuroSCORE was especially developed for cardiac surgery in general, especially for **coronary re-vascularisation** procedures, the majority of data belonging to this group of patients, and not specifically for AVR.



A new scoring system would be

WELCOME

There are patients with combinations of problems including:

- Multiple previous operations
- Radiation chest/mediastinal disease
- Liver failure/kidney failure
- Diffuse atherosclerosis
- Porcelain aorta
- Neoplasms

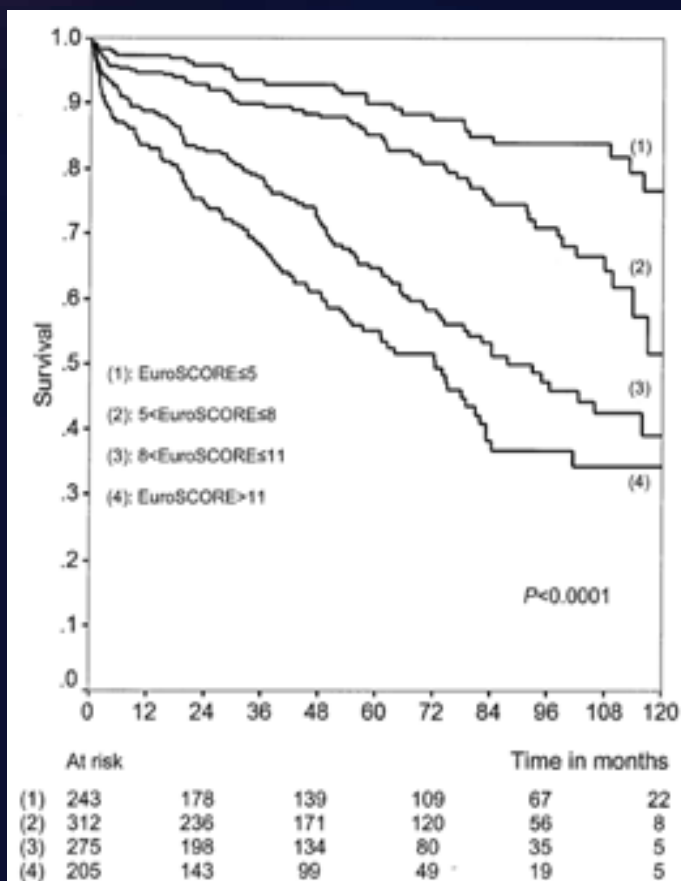


EuroSCORE Predicts Long-Term Mortality After Heart Valve Surgery

Ioannis K. Toumpoulis, MD, Constantine E. Anagnostopoulos, MD,
Stavros K. Toumpoulis, MD, Joseph J. DeRose, Jr, MD, and Daniel G. Swistel, MD

Department of Cardiothoracic Surgery, Columbia University College of Physicians and Surgeons, St. Luke's-Roosevelt Hospital Center, New York, New York, Department of Cardiac Surgery, University of Athens School of Medicine, Attikon Hospital Center, Athens, Greece

Ann Thorac Surg 2005;79:1902-8



Univariate Cox regression analysis confirmed that both standard (hazard ratio 1.169, 95% confidence interval [CI] 1.137-1.201; $p < 0.001$) and logistic EuroSCORE (hazard ratio 1.025, 95% CI 1.020-1.031; $p < 0.001$) were strong predictors of long-term mortality. Hazard ratios of the

U Fig 1. Kaplan-Meier survival plots of the quartiles in all patients with heart valve surgery who were discharged alive from the hospital according to standard EuroSCORE. (EuroSCORE = European System for Cardiac Operative Risk Evaluation.)



Overestimation of aortic valve replacement risk by EuroSCORE: implications for percutaneous valve replacement

European Heart Journal (2009) 30, 74–80

Brigitte R. Osswald^{1*}, Vassil Gegouskov², Dominika Badowski-Zyla², Ursula Tochtermann², Gisela Thomas², Siegfried Hagl², and Eugene H. Blackstone^{3,4}

However, the EuroSCORE is based on 1995 mortality across all of cardiac surgery, a time at which coronary artery bypass grafting dominated the patient population, not heart valve disease.

Table 2 Difference between expected and observed mortalities according to the actual logistic EuroSCORE model and additive EuroSCORE in terms of EuroSCORE risk groups

	Group 1	Group 2	Group 3
Logistic EuroSCORE			
[n deaths/n total (% , CI)]—actual	0/239 (0%, 0–1.5%)	9/493 (1.8%, 0.6–3.0%)	25/813 (3.1%, 1.9–4.3%)
[n deaths/n total (% , CI)]—predicted	4.2/239 (1.3%, 0.1–3.6%)	18.6/493 (3.8%, 2.1–5.5%)	120.7/813 (14.8%, 12.4–17.3%)
χ^2 -value, P	4.3, 0.04	5.1, 0.02	89.1, <0.0001
Additive EuroSCORE			
[n deaths/n total (% , CI)]—actual	0/183 (0%, 0–2.0%)	5/529 (1.0%, 0.1–1.8%)	29/833 (3.5%, 2.2–4.7%)
[n deaths/n total (% , CI)]—predicted	2.8/183 (1.5%, 0–3.3%)	21.6/529 (4.1%, 2.6–6.3%)	69.5/833 (8.3%, 6.5–10.2%)
χ^2 -value, P	2.8, 0.09	13.3, 0.0003	25.8, <0.0001

Transcatheter Aortic Valve Implantation for the Treatment of Severe Symptomatic Aortic Stenosis in Patients at Very High or Prohibitive Surgical Risk

Acute and Late Outcomes of the Multicenter Canadian Experience

Table 2 Procedural and 30-Day Outcomes

Variables	All Procedures (n = 345)	Transfemoral (n = 168)	Transapical (n = 177)
Procedural variables			
Successful procedure	322 (93.3)	152 (90.5)	170 (96.1)
Procedural death	6 (1.7)	3 (1.8)	3 (1.7)
Valve embolization	7 (2.0)	5 (3.0)	2 (1.1)
Need for a second valve	9 (2.6)	4 (2.4)	5 (2.8)
Conversion to open heart surgery	6 (1.7)	2 (1.2)	4 (2.3)
Need for hemodynamic support	14 (4.1)	7 (4.2)	7 (3.9)
Major access site complications	45 (13.0)	22 (13.1)	23 (13.0)
Stroke	2 (0.6)	1 (0.6)	1 (0.6)
Coronary obstruction	3 (0.9)	1 (0.6)	2 (1.1)
Life-threatening arrhythmias	28 (8.1)	12 (7.1)	16 (9.0)
30-day outcomes			
Myocardial infarction	4 (1.2)	1 (0.6)	3 (1.7)
Stroke	8 (2.3)	5 (3.0)	3 (1.7)
Sepsis	10 (2.9)	5 (3.0)	5 (2.8)
Need for hemodialysis	9 (2.6)	3 (1.8)	6 (3.4)
Need for permanent pacemaker	17 (4.9)	6 (3.6)	11 (6.2)
30-day mortality	36 (10.4)	16 (9.5)	20 (11.3)



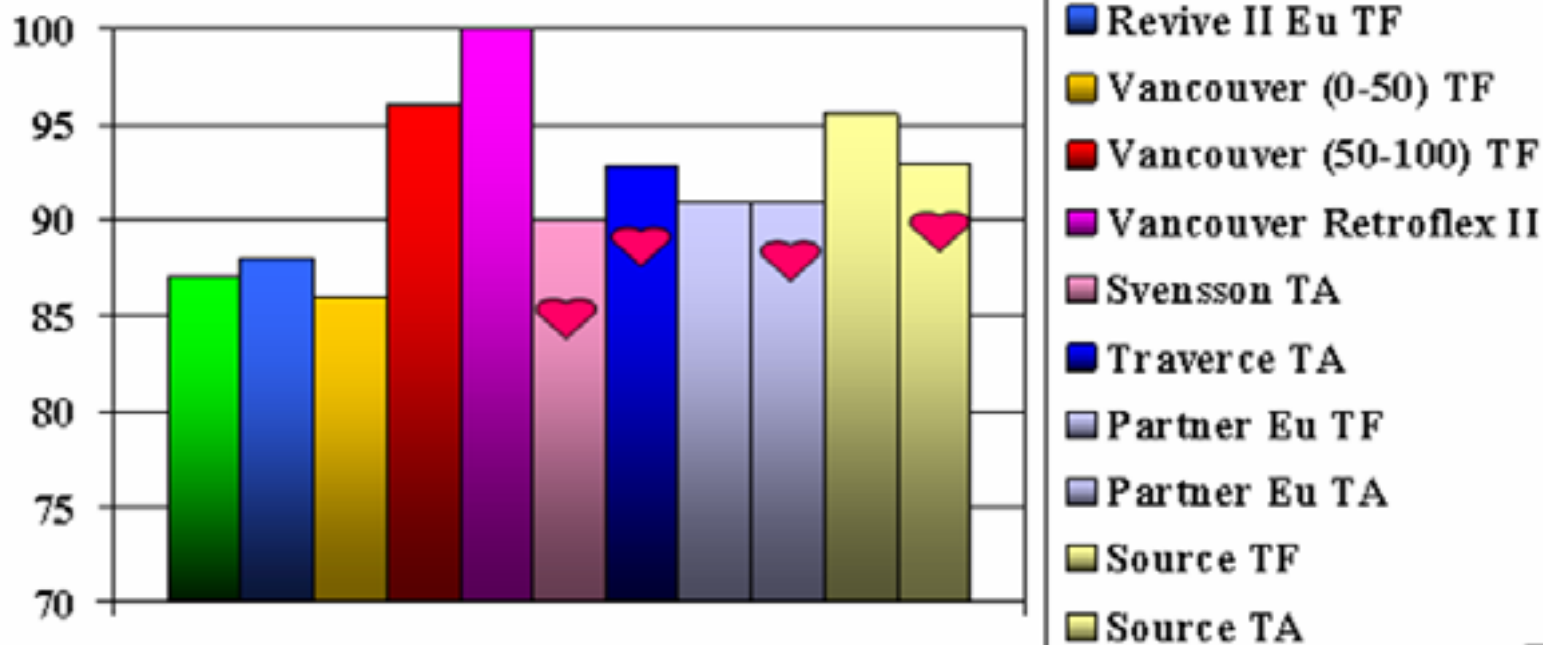
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J Am Coll Cardiol 2010;55:000-000

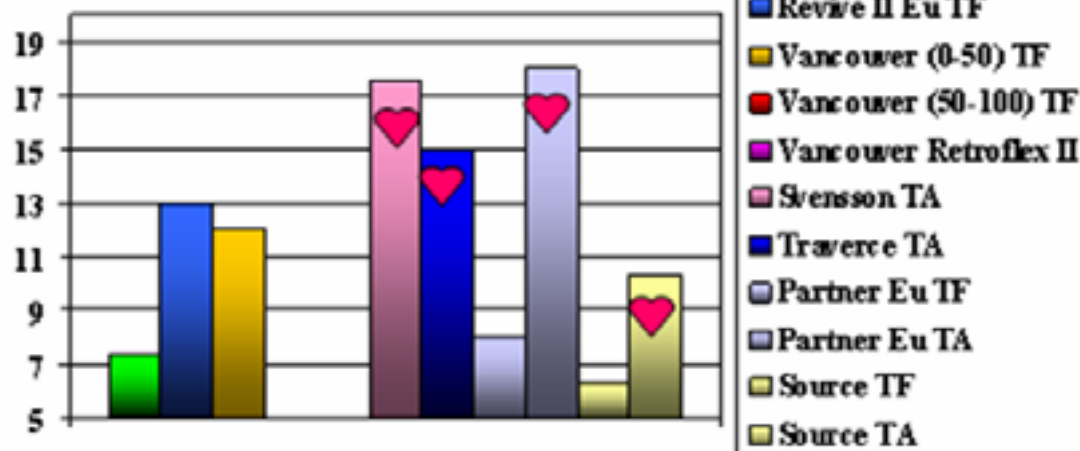
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Monzino

Edwards SAPIEN™ Transcatheter Heart Valve Global Clinical Experience

Procedural Success %



30-Day Mortality

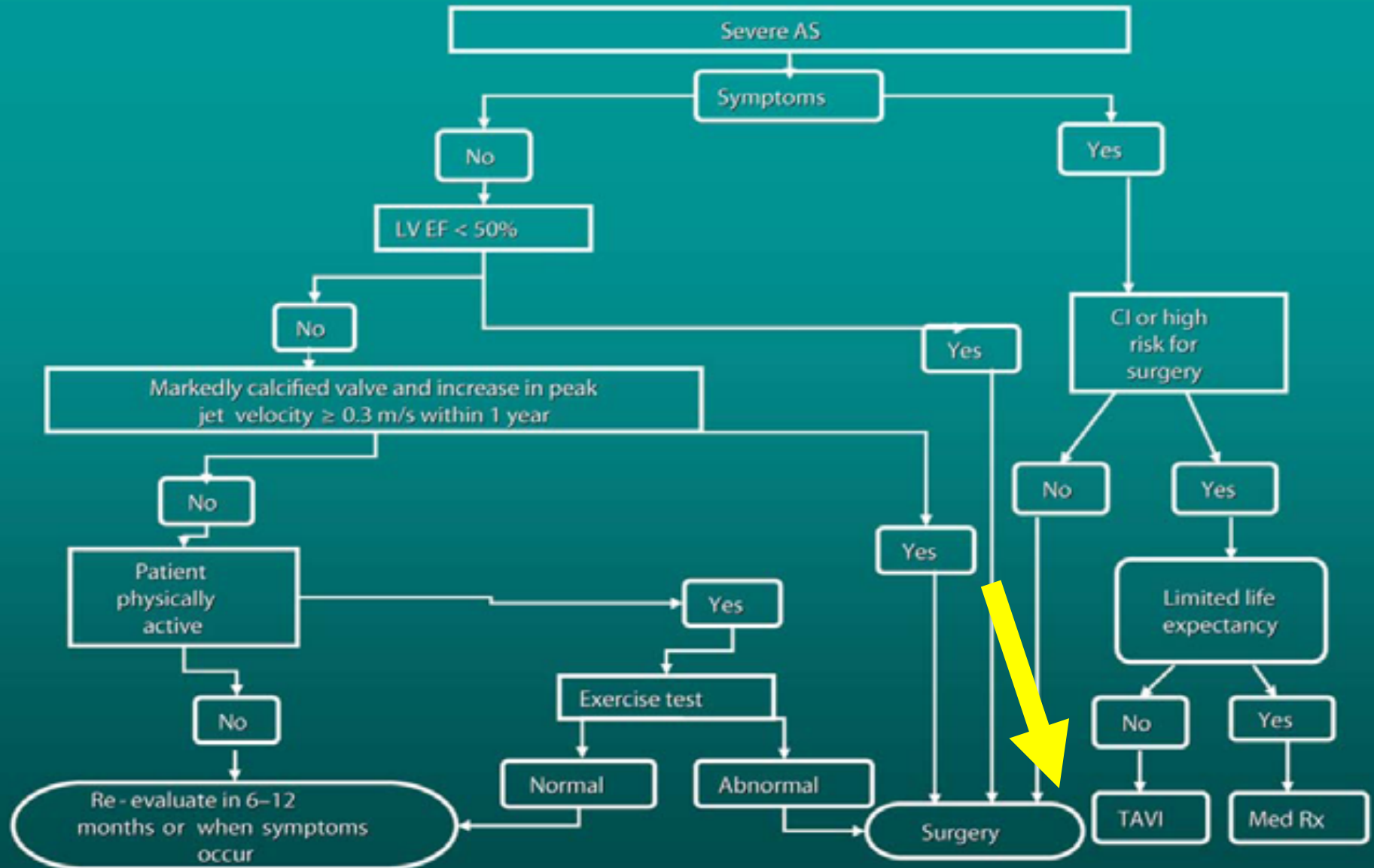


 transcatheter

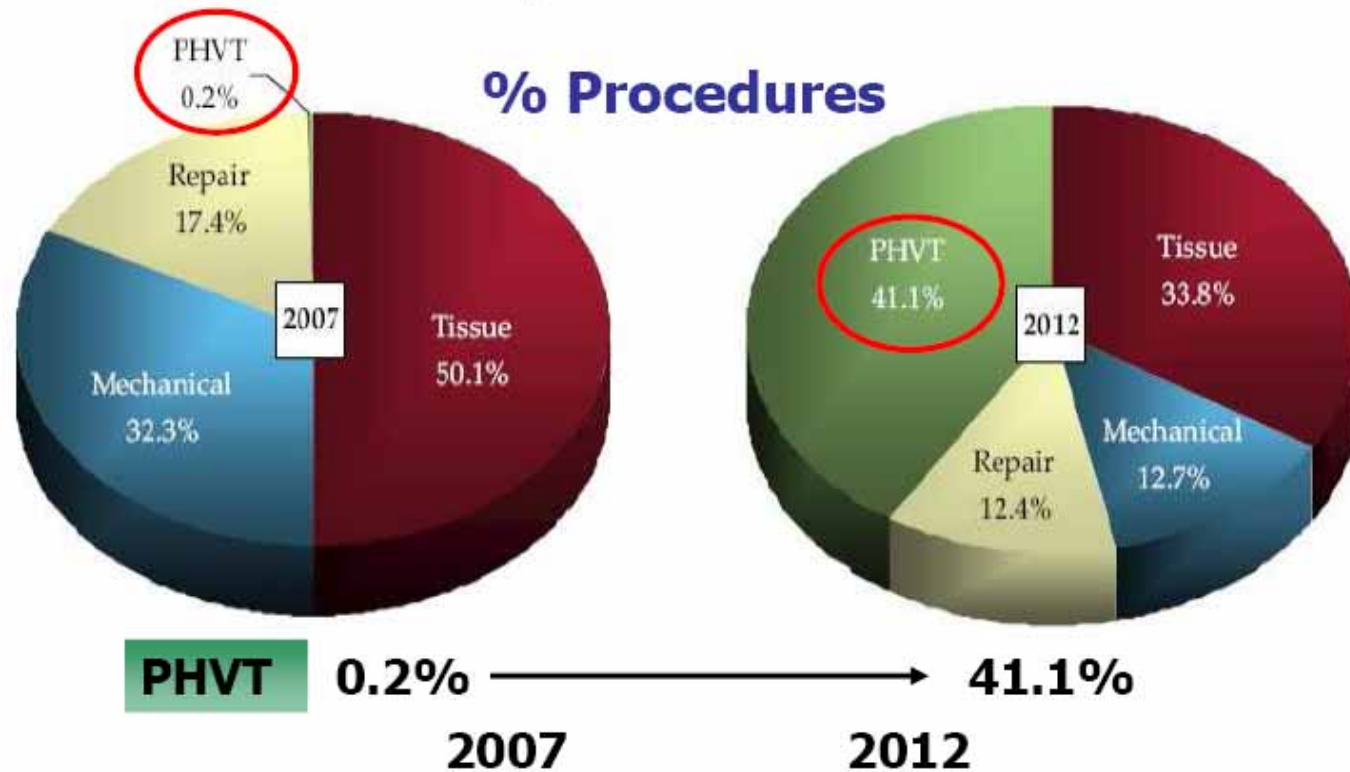
Risk stratification of patients with aortic stenosis

Alec Vahanian^{1*} and Catherine M. Otto²

EHJ 2010 Jan



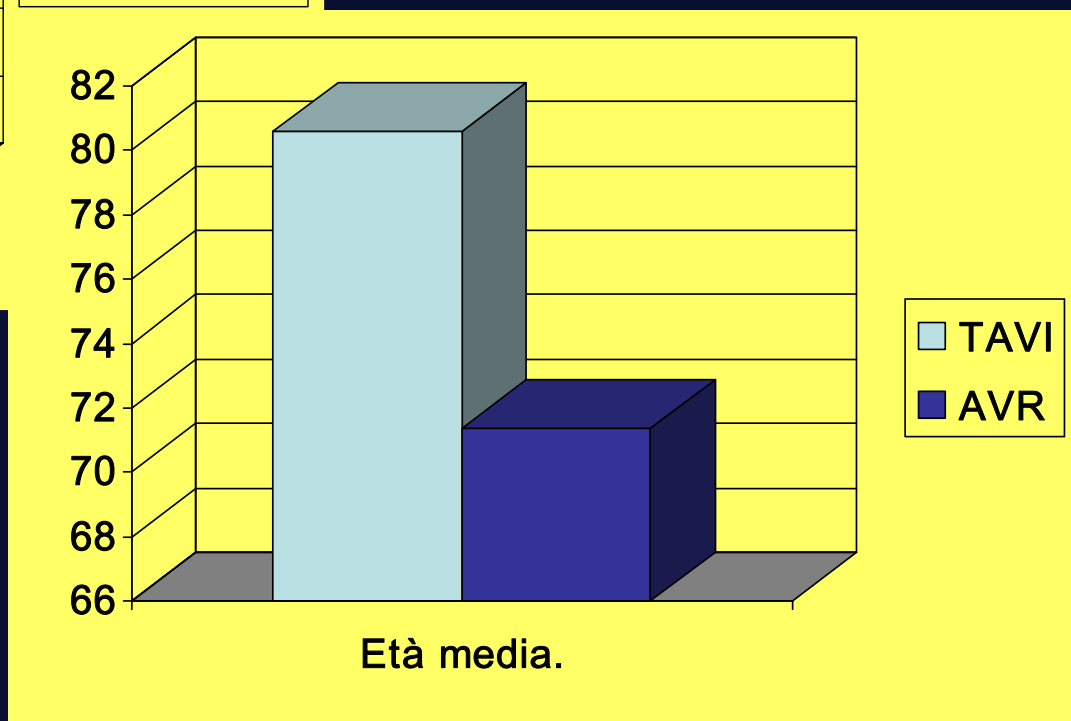
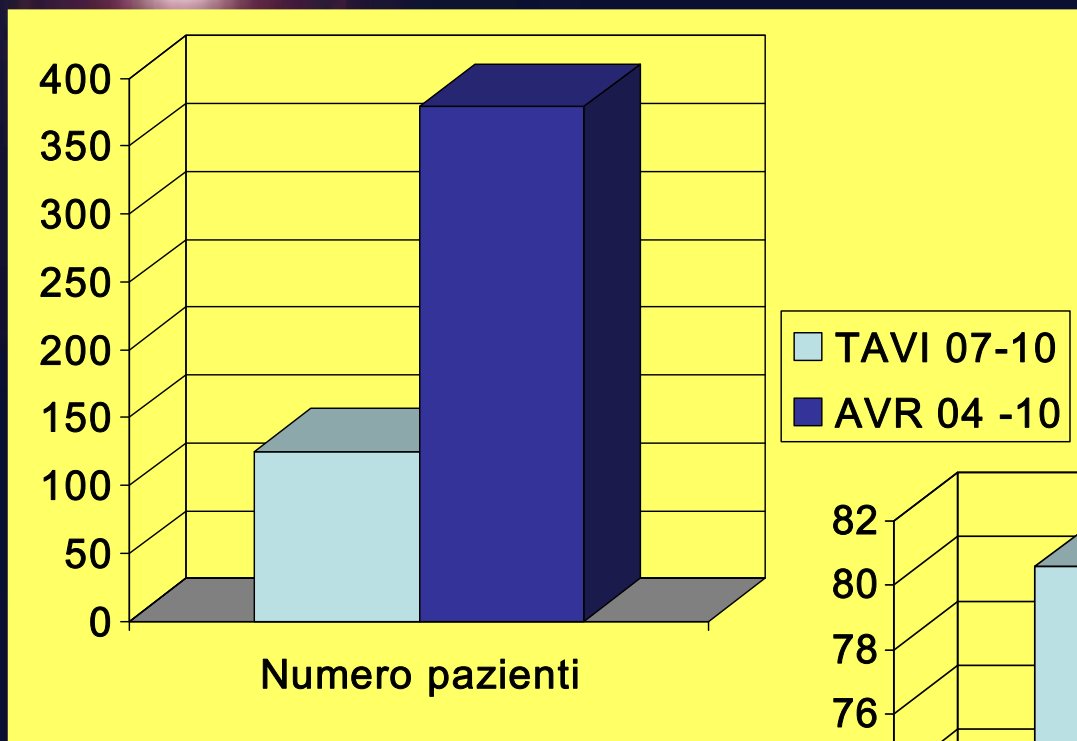
Heart Valve Market Forecast . . . Get Ready for the Storm!



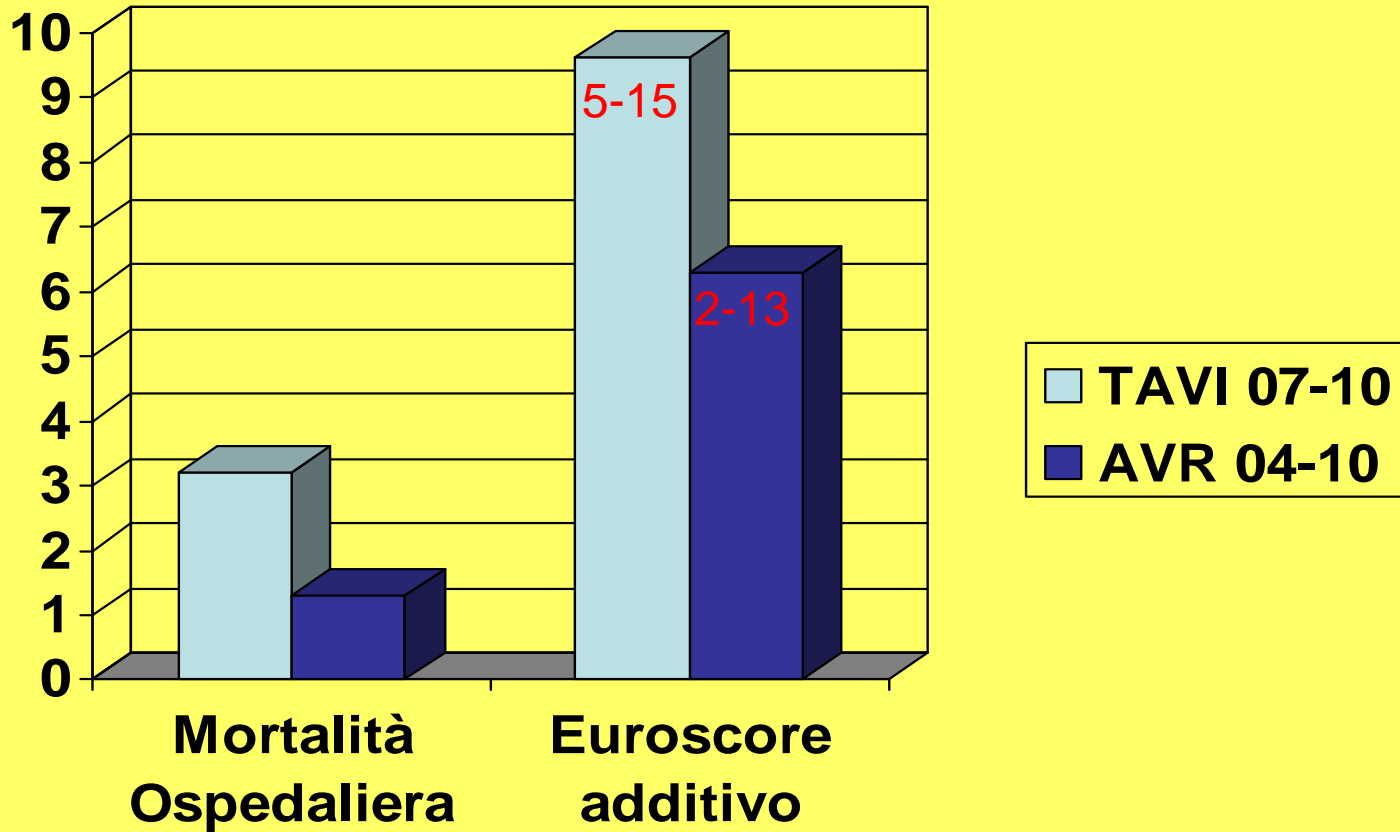
Source: Millennium Research Group 2008



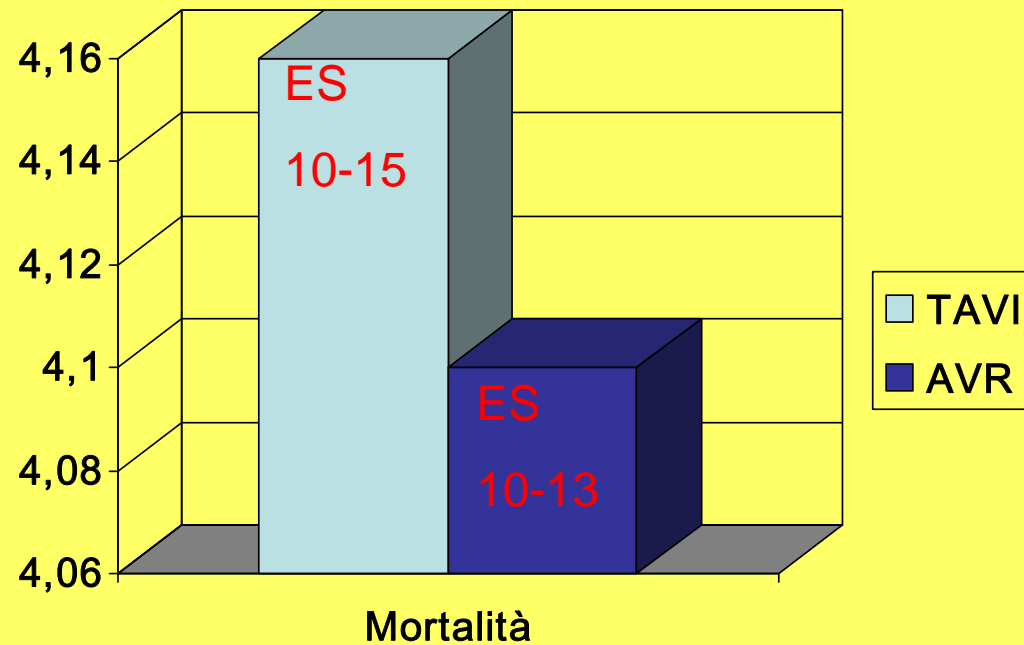
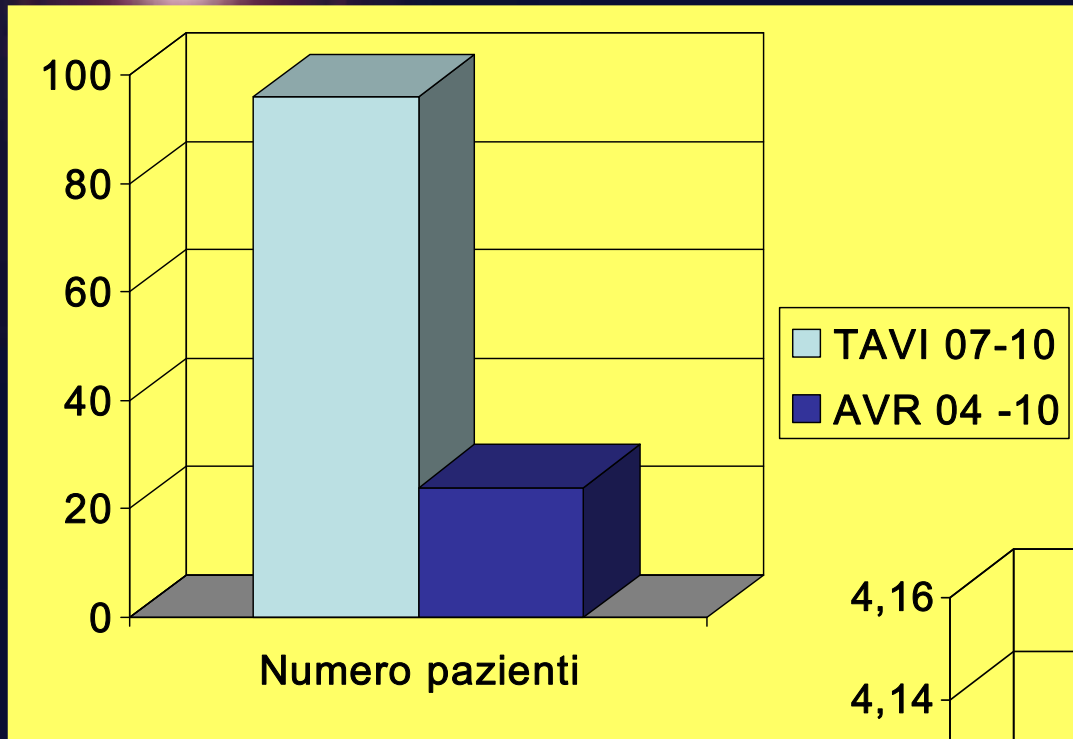
Casistica MONZINO : Numero Pazienti ed Età



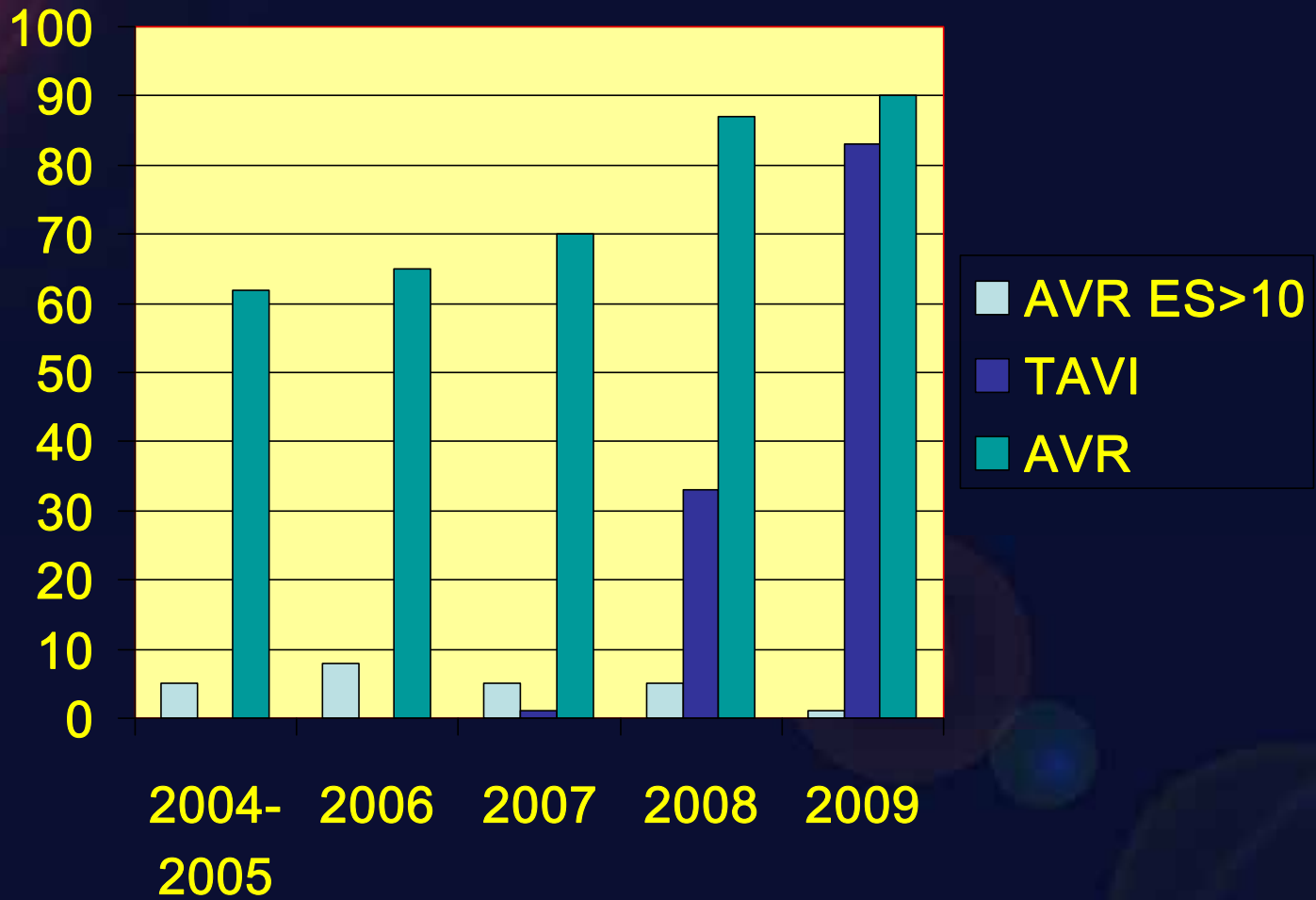
AVR chirurgiche e TAVI: confronto al Cardiologico Monzino



TAVI e AVR con Euroscore > 10



Casistica stenosi aortiche severe trattate al Monzino



TAVI per i pazienti a basso rischio?

Interventional/Surgery

Experts ponder expanding transcatheter valves indication to lower-risk patients

CRT FEB 25

the heart.org [heartwire]
10 YEARS OF ONLINE CARDIOLOGY

MONDAY, MARCH 1, 2010

- Desiderio del paziente di minore invasività.
- Risultati migliori con malati a basso rischio.
 - Mentalità del chirurgo più aperta.
 - Necessità di Trial randomizzati?
 - Guidare la scelta del malato.



Transcatheter aortic valve implantation: time to expand?

Thomas Walther, Michael W.A. Chu and Friedrich W. Mohr

Advanced age alone should not be sufficient.

Furthermore, based on current results, an extension of inclusion criteria towards younger and healthier patients does not seem to be legitimate at present. In addition,

The superior results with conventional aortic valve surgery should always be kept in mind. Patients with an acceptable risk profile should therefore continue to undergo the standard therapy – conventional aortic valve surgery.



Outcomes and Safety of Percutaneous Aortic Valve Replacement

Alan Zajarias, MD,* Alain G. Cribier, MD†

St. Louis, Missouri; and Rouen, France

important than increased longevity. Today, transcatheter AVR should remain limited to high-risk patients, and uncontrolled diffusion should be avoided. In the future, if the results continue to be favorable, increased indications for this technology may become available.

J Am Coll Cardiol 2009;53: 1829–36



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Conclusioni

- Allo stato attuale minima erosione delle indicazioni AVR.
- Risultati TAVI ancora influenzati da devices (-) e operatori (+); spinta del mercato.
- La TAVI influenzerà la strategia “biologica”



Conclusioni

- L' E.S. è utile nella stratificazione dei “follow up” attesi. Durata valvola VS durata vita.
- E' comunque prevedibile uno slittamento delle indicazioni “verso il basso” della scala di rischio clinico (anche con procedure ripetute)....
-ma il mix futuro sarà **credibile** se multi-disciplinare e gestito (non subito).





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Overestimation of aortic valve replacement risk by EuroSCORE: implications for percutaneous valve replacement

Brigitte R. Osswald^{1*}, Vassil Gegouskov², Dominika Badowski-Zyla², Ursula Tochtermann², Gisela Thomas², Siegfried Hagl², and Eugene H. Blackstone^{3,4}

European Heart Journal (2009) 30, 74–80

- 1) AVR chirurgica presenta basso rischio in pazienti ad alto rischio.
- 2) Sovrastima dell'EuroSCORE in AVR isolata.
- 3) Basso rischio procedurale: estensione a stenosi aortica non sintomatica.
- 4) Prima si interviene, meno cambi strutturali.
- 5) TAVI, gradienti e leak residui accettati quando manca alternativa



Le 3 eziologie più frequenti di stenosi aortica

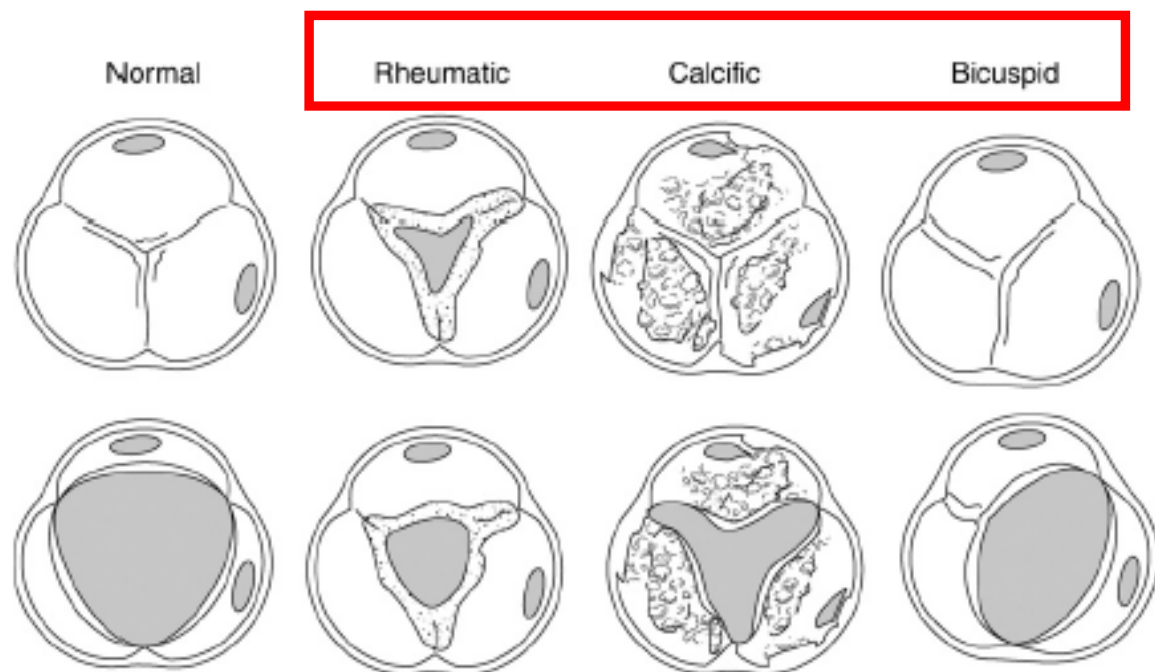


Figure 1 Aortic stenosis aetiology: morphology of calcific AS, bicuspid valve, and rheumatic AS (Adapted from C. Otto, Principles of Echocardiography, 2007).



Indicazione chirurgica stenosi valvolare aortica

Table 3 Recommendations for classification of AS severity

	Aortic sclerosis	Mild	Moderate	Severe
Aortic jet velocity (m/s)	≤ 2.5 m/s	2.6-2.9	3.0-4.0	> 4.0
Mean gradient (mmHg)	–	< 20 ($< 30^a$)	20-40 ^b (30-50 ^a)	$> 40^b$ ($> 50^a$)
AVA (cm ²)	–	> 1.5	1.0-1.5	< 1.0
Indexed AVA (cm ² /m ²)	–	> 0.85	0.60-0.85	< 0.6
Velocity ratio	–	> 0.50	0.25-0.50	< 0.25

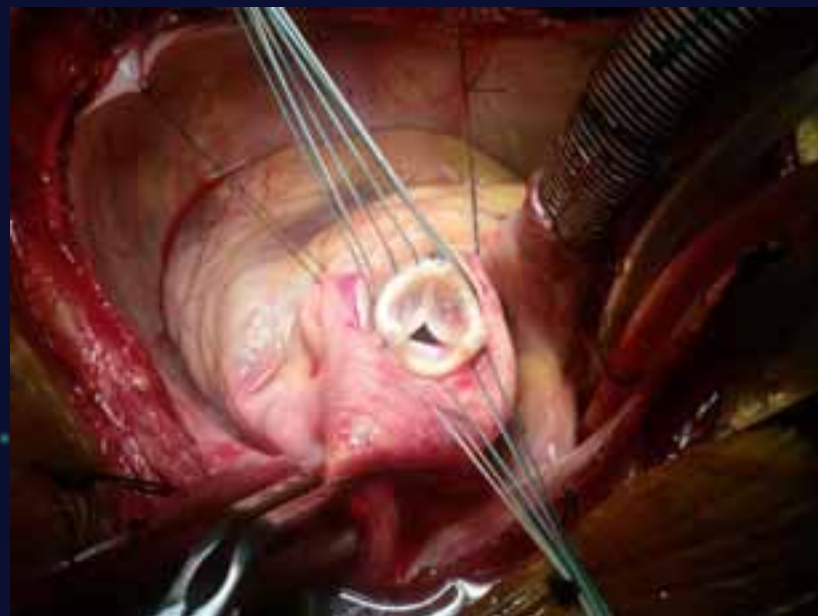
^aESC Guidelines.

^bAHA/ACC Guidelines.



Stenosi valvolare aortica severa da trattare !!!

AVR chirurgica



TAVI



Decision-making in elderly patients with severe aortic stenosis: why are so many denied surgery?

Bernard Lung^{1*}, Agnès Cachier¹, Gabriel Baron², David Messika-Zeitoun¹, François Delahaye³, Pilar Tornos⁴, Christa Gohlke-Bärwolf⁵, Eric Boersma⁶, Philippe Ravaud², and Alec Vahanian¹

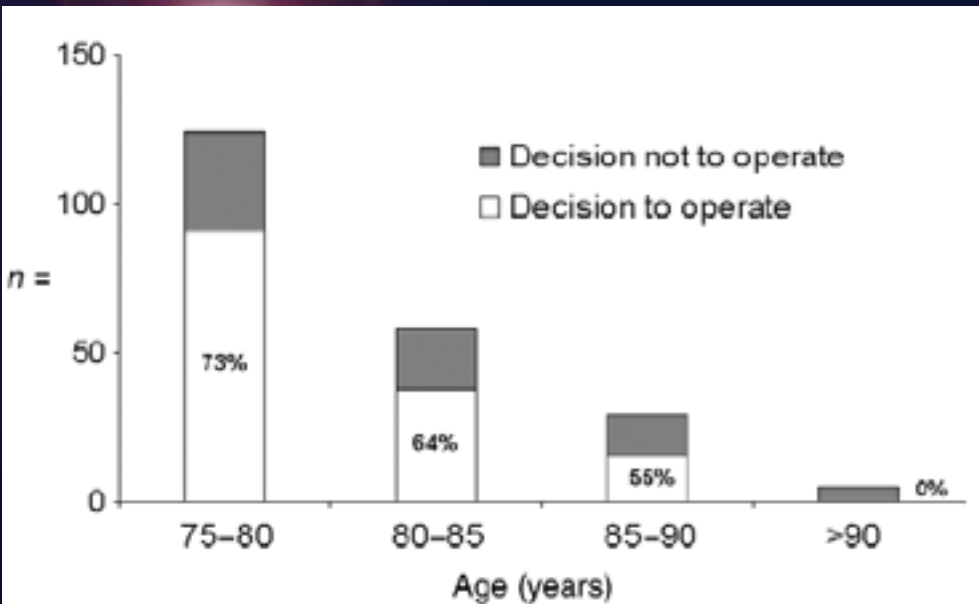
Table 3 Factors associated with a decision not to operate

	<i>P</i> -value	Odds ratio	95% CI
LV ejection fraction	0.004		
>50%		1	
30–50%		2.66	1.57–4.64
≤30%		7.09	2.42–20.82
Age (years)	0.005		
75–80		1	
80–85		1.90	1.22–2.99
≥85		3.60	1.47–8.82
Neurological dysfunction	0.02	3.82	1.23–12.27

Conclusion Surgery was denied in 33% of elderly patients with severe, symptomatic AS. Older age and LV dysfunction were the most striking characteristics of patients who were denied surgery, whereas comorbidity played a less important role.



Età e Frazione di Eiezione



European Heart Journal (2005) 26, 2714-2720

Figure 2 Decision to operate according to age range.

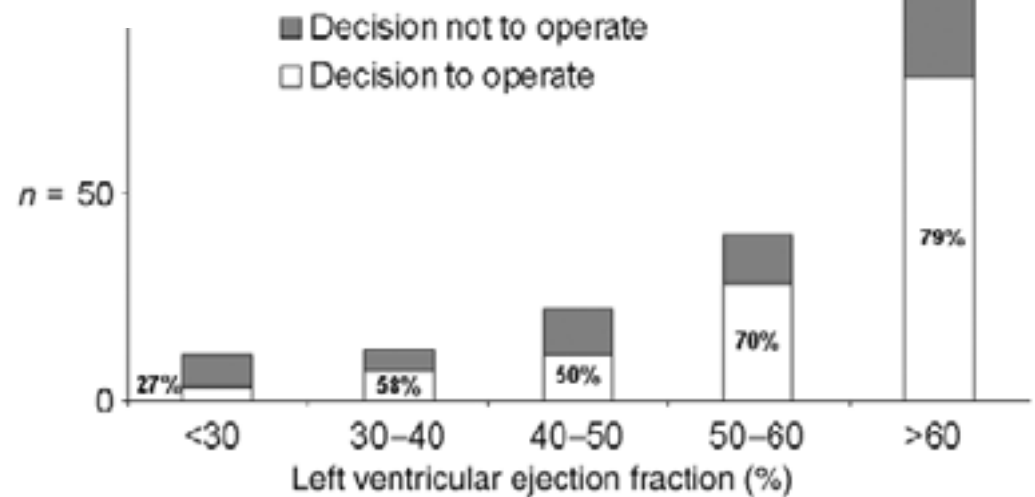


Figure 3 Decision to operate according to left ventricular ejection fraction.

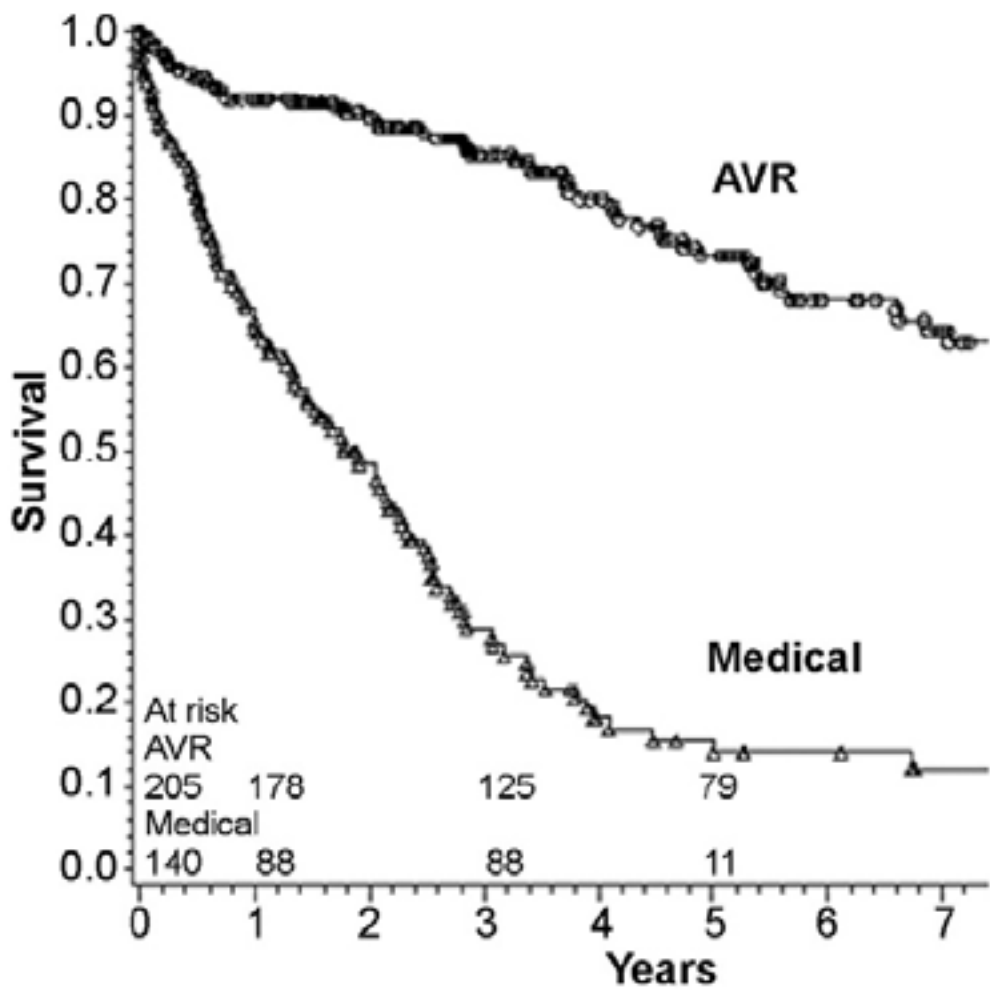


Il rifiuto del chirurgo

B. Surgeon's Primary Reason for Not Recommending AVR	(n = 23) ^d
Comorbidities	12 (52.2)
Uncontrolled infection or sepsis (3)	
Major stroke, coma, or altered mental status (3)	
Advanced or incurable cancer (1)	
Pulmonary hypertension (1)	
Severe thrombocytopenia (1)	
Cirrhosis (1)	
Chronic obstructive pulmonary disease or pulmonary fibrosis (1)	
Multisystem organ failure (1)	
Poor functional status	6 (26.1)
Porcelain aorta	2 (8.7)
Asymptomatic	2 (8.7) ^e
Low ejection fraction	1 (4.3)

^a Seventeen of these patients were more than 70 years old. ^b Age > 80 years. ^c Ejection fraction < 0.20. ^d Twenty-three of 140 patients treated medically were evaluated by a cardiac surgeon and the surgeon recommended nonsurgical treatment. ^e One of these patients was 93 years old; the other had prior coronary artery bypass grafting surgery.





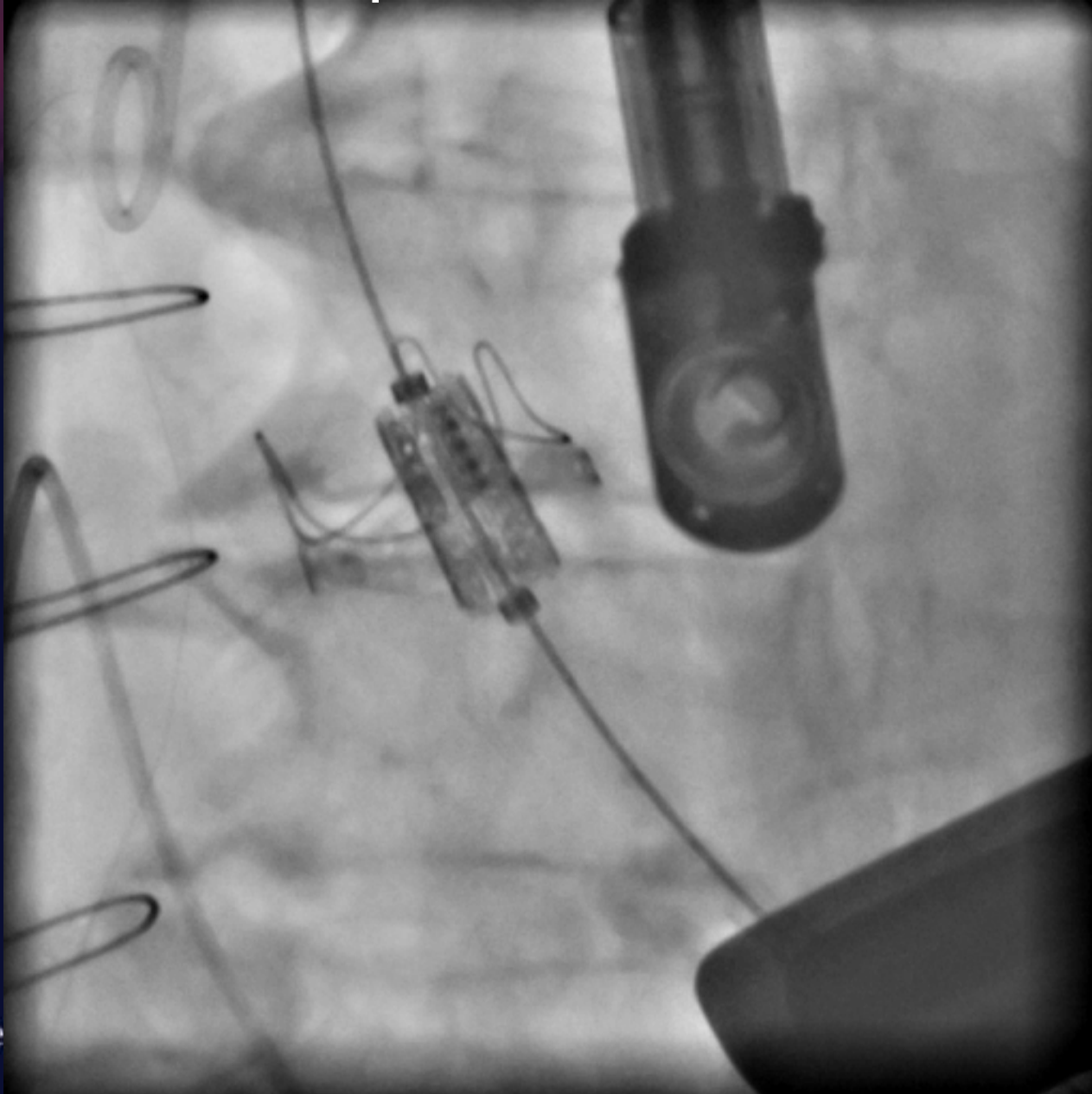
The AVR group had higher survival rates than the medical patients at 1 year (92% versus 65%), 3 years (85% versus 29%), and 5 years (73% versus 16%; log-rank test $p < 0.0001$).

Valve replacement was independently associated with decreased mortality (hazard ratio, 0.17; 95% confidence interval, 0.10 to 0.27; $p < 0.0001$).

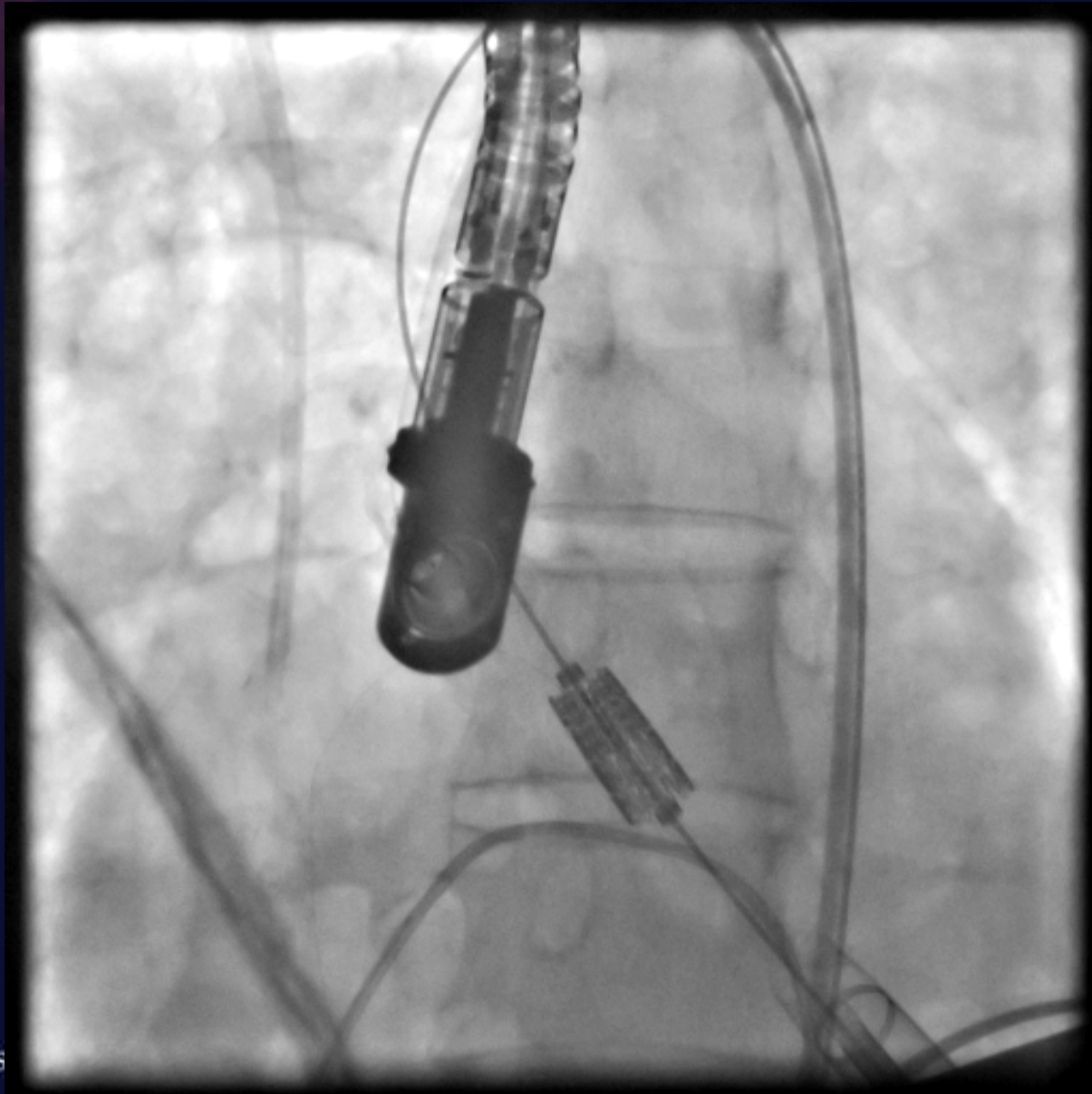
Fig 2. Survival rates after diagnosis of severe aortic stenosis in patients treated medically and those treated by aortic valve replacement (AVR).



TAVI – transapicale – Valve in Valve



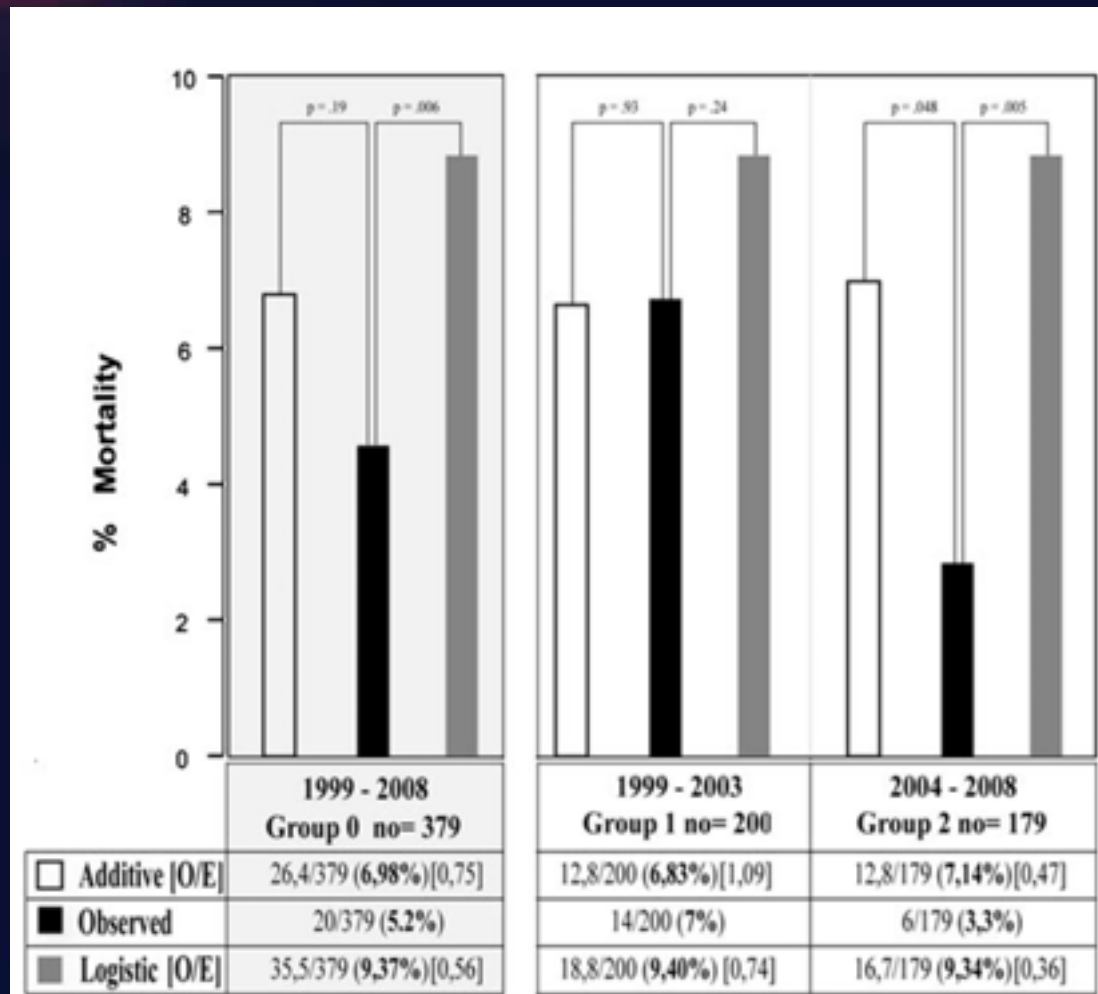
TAVI – transfemorale -



Euroscore e stenosi aortica

Absolute and relative risk prediction in patients candidate to isolated aortic valve replacement: should we change our mind?

Gabriele Di Giammarco*, Roberto Rabozzi, Bruno Chiappini, Gabriele Tamagnini



High-Risk Aortic Valve Replacement: Are the Outcomes as Bad as Predicted?

Eugene A. Grossi, MD, Charles F. Schwartz, MD, Pey-Jen Yu, MD, Ulrich P. Jorde, MD, Gregory A. Crooke, MD, Juan B. Grau, MD, Greg H. Ribakove, MD, F. Gregory Baumann, PhD, Patricia Ursumanno, PhD, Alfred T. Culliford, MD, Stephen B. Colvin, MD, and Aubrey C. Galloway, MD

Departments of Cardiothoracic Surgery and Medicine, Division of Cardiology, New York University School of Medicine, New York, New York

Ann Thorac Surg 2008;85:102–7

Logistic EuroSCORE **greatly overpredicts** mortality in these patients. Five-year survival is good, unlike suggestions from earlier EuroSCORE analyses. This raises concern about unknown long-term percutaneous prosthesis function. Clinical trials for these patients must include **randomized surgical controls and have long-term end points.**

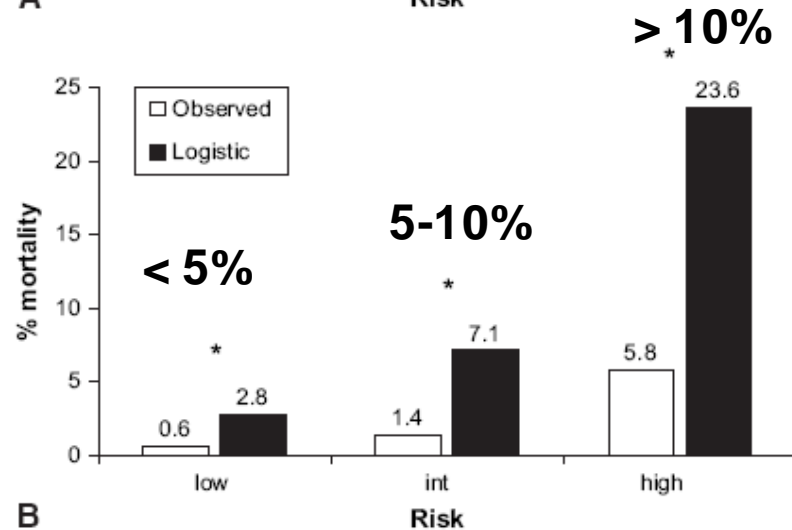
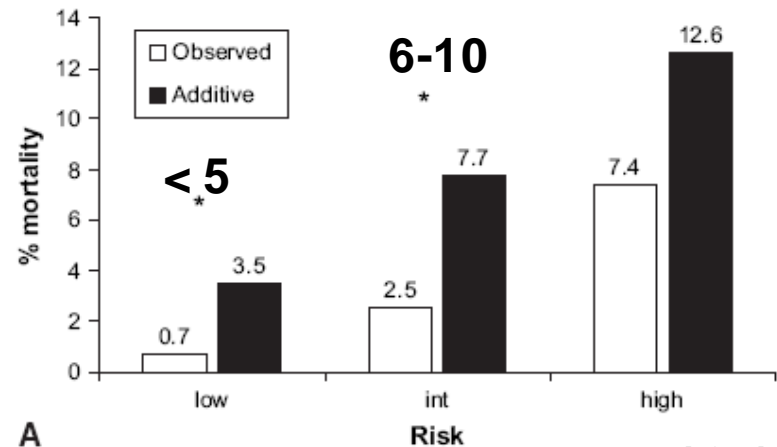
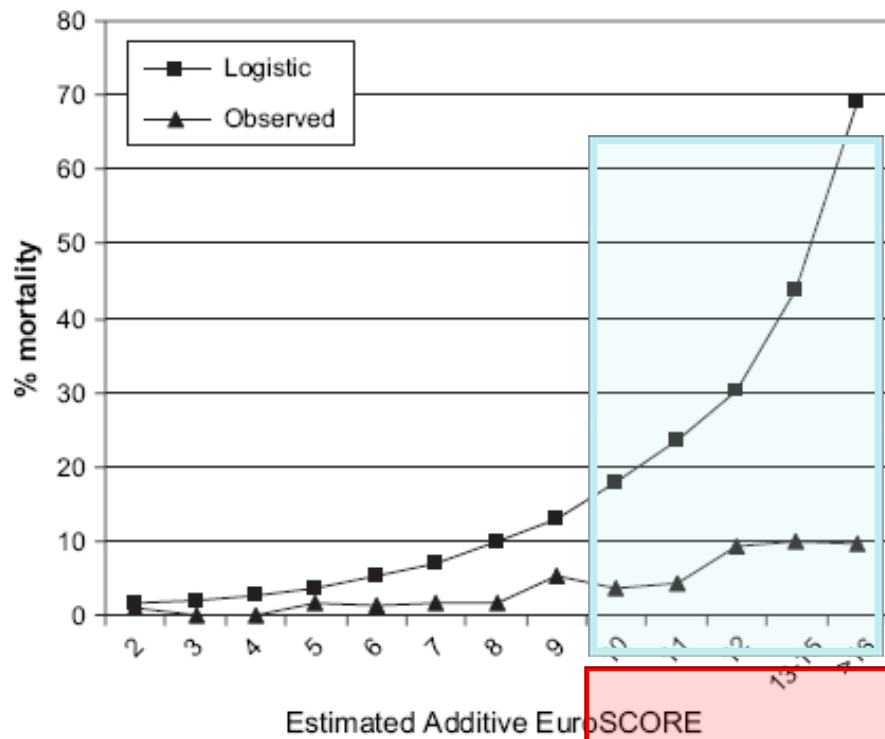


Is the European System for Cardiac Operative Risk Evaluation model valid for estimating the operative risk of patients considered for percutaneous aortic valve replacement?

Morgan L. Brown, MD,^a Hartzell V. Schaff, MD,^a Maurice E. Sarano, MD,^b Zhuo Li, MS,^c Thoralf M. Sundt, MD,^a Joseph A. Dearani, MD,^a Charles J. Mullany, MBMS,^a and Thomas A. Orszulak, MD^a

The Journal of Thoracic and Cardiovascular Surgery • September 2008

>10



Cardiology/cardiac surgery/vascular surgery—evolution to one speciality?☆

Bruce Keogh*

European Journal of Cardio-thoracic Surgery 26 (2004) S76–S77

Percutaneous transcatheter aortic valve implantation: Evolution of the technology

Paul T.L. Chiam, MBBS, MRCP,^{a,b} and Carlos E. Ruiz, MD, PhD, FACC, FESC^{a,c}
New York, NY; and Singapore, Singapore

Am Heart J 2009;157:229-42

For these percutaneous transcatheter technologies to continue to evolve and improve, collaboration between cardiac surgeons, interventional cardiologists, clinical cardiologists, imaging specialists, cardiac anesthesiologists, basic scientists, industry, and regulators is condition sine qua non. Both cardiologists and surgeons who want to perform these procedures should be cognizant of the fact that there is a steep learning curve. Therefore, the interventionalists should undergo device-specific training (perhaps including simulator training) and proctoring of the initial cases.



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Therapeutic decisions for patients with symptomatic severe aortic stenosis
Much still to do!

Da evitare: il paziente Ping-Pong !

Interestingly, virtually all published series of PAVI include patients initially considered too high risk for surgery, subsequently considered not amenable for the percutaneous procedure and **finally submitted to surgery**, mostly with excellent results.



PERIPROCEDURAL AND IN-HOSPITAL RESULTS

Not Heart failure (62)

SUCCESS IN IMPLANTED

PATIENTS: 61/61 (100%)

Heart Failure (62)

SUCCESS IN IMPLANTED

PATIENTS: 62/62 (100%)

Device migration, malpositioning 0/122 (0%)

PROCEDURAL SUCCESS: 61/62 (98,4%)

PROCEDURAL DEATH: 1/62 (1,6%)

EMERGENT CARDIAC SURGERY:

1/62 (1,6%)

PROCEDURAL SUCCESS: 62/62 (100%)

PROCEDURAL DEATH: 0/62 (0%)

EMERGENT CARDIAC SURGERY:

0/62 (0%)

30-day mortality 3/123 (2,4%)

30-DAY MORTALITY: 1/62 (1,6%)

30-DAY MORTALITY: 2/62 (3,2%)

Considerazioni Casistica Monzino

- 1) AVR è il trattamento di scelta per stenosi aortica severa – bassa mortalità e risultati duraturi.
- 2) TAVI, nuova metodica, in caso di controindicazioni alla chirurgia o di pazienti ad alto rischio.
- 3) Pazienti TAVI sono pazienti “nuovi” veramente rifiutati dal chirurgo o ad esso non indirizzati.
- 4) TAVI: risultati soddisfacenti per rischio operatorio ed età.
- 5) Necessità luogo idoneo: centro ad alta specializzazione e presenza della sala ibrida .



The EuroSCORE – 10 years later. Time to change?

European Journal of Cardio-thoracic Surgery 37 (2010) 253–254

In my view, one of the major problems in the equation is **the inadequate use of the EuroSCORE** to anticipate surgical risk. Not only is there often confusion between the additive and the logistic scores, often used indiscriminately in the publications, but it is also **very well known that the EuroSCORE does not currently predict accurately the risk of AVR**. After all, the EuroSCORE was not specifically developed for valve surgery. In my experience, **it is usually double the STS score and even this one overestimates mortality** in most experienced centers.



Cosa non valuta l'Euroscore

- Aorta a porcellana
- Pregressa irradiazione
- Patologia tumorale
- Anatomia sfavorevole
- Efficienza e risultati del centro
- Efficienza e risultati operatore
- Giudizio clinico (Fragilità del paziente)



LA SALA IBRIDA



Progettata per l'esecuzione di interventi di tipo chirurgico, endovascolare ed elettrofisiologico.



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Will the use of percutaneous aortic valves remain compassionate?

Francis Robicsek*

- Risultati significativamente inferiori alla chirurgia tradizionale
- Implicazioni economiche industrie biomedicali
- Solo uso compassionevole?
- Tendenza ad allargare indicazione con risultati alla lunga inferiori vs Chirurgia
- Doppia proposta del chirurgo vs unica proposta del cardiologo
- Monitorare impianti TAVI e dati a lungo termine
- Mortalità e risultati nei consensi informati

We should not repeat the mistakes of the past.

Percutaneous aortic valve implantation. The demise of classical aortic valve replacement?

Manuel J. Antunes*

- Durata della valvola non conosciuta
- Stigmatizzare effetto Ping-Pong
- Complicanze vascolari, rigurgito paraprotetico e impianto PM
- Collaborazione cardiologi e chirurghi su transapicali
- Sovrastima rischio con EuroSCORE e STS
- Necessità di esteso studio randomizzato multicentrico

European Heart Journal (2008) 29, 1339–1341



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